

ABSTRACT OF DISCLOSURE

A high-quality dielectric film is formed by generating plasma of a high electron density by a method such as diluting a rare gas or raising a frequency of a power supplier, and generating oxygen atoms or nitrogen atoms of a high density. The dielectric film contains silicon oxide in which the composition ratio of silicon and oxygen is between (1:1.94) and (1:2) both inclusive, silicon nitride in which the composition ratio of silicon and nitrogen is between (1:1.94) and (1:2) both inclusive, or silicon oxynitride in which the composition ratio of silicon and nitrogen is between (3:3.84) and (3:4) both inclusive.